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ABSTRACT

This paper is a critical survey of the work of various linguists in the field of English intonation studies. Crystal's work is cited as being particularly influential in the author's work. It is argued that there is a lack of progress in this field because of a preoccupation on the part of scholars with their own studies and their application and because of the variety in the kinds of notation used in the United States and the United Kingdom. As a solution to the latter problem, an amplification of the Kingdom notation is advocated, combining the Kingdon simplicity with American efficiency and thoroughness. (AM)

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ENGLISH INTONATION STUDIES

by

JACK WINDSOR LEWIS

In common with other branches of linguistics, English intonation studies made little progress before the latter part of the last century. The simplest contrast in English intonation — the choice between a rising and a falling tone at the end of a sentence — had been remarked upon over 300 years ago, but before Henry Sweet the only serious examinations of English speech melody had been made in 1775 by a scholar named Joshua Steele (who had used an augmented musical notation to record among other things Garrick speaking Shakespeare), by John Walker, with a simpler treatment of The Melody of Speaking (1787) based on Steele's foundation and by Alexander Melville Bell in his Elocutionary Manual.

Following this tradition, Henry Sweet expounded a notation for pitch using symbols for rising, falling, falling-rising and rising-falling tones (´, `, ˇ and ˆ) in his Handbook of Phonetics (1877) etc. He later referred to the possibility of higher and lower placing of the symbols to differentiate two widths of pitch movement and even included in his symbology indicators that could be used to differentiate etically between the sliding and leaping forms of moving tones. He mentions rise-fall-rise and level tones, of the latter, remarking in The Sounds of English (1907) that it "hardly ever occurs in English" (which shows that he tended to ignore tones that were not "nuclear"). The only notation for English he exemplified contained no indication of height or width of pitch movement, but four degrees of stress were represented by a separate set of symbols. His four symbols for moving tones were the basic ones Roger Kingdon was to take up again and bring into general British use two generations later. In the practical context of his pioneering EFL textbooks it may seem wasteful to have symbolised tone and stress separately but it was a method that Crystal and others were to return to in the Sixties in various analytical works springing from Professor Randolph Quirk's Survey of English Usage. The greatest defect of Sweet's notation from a practical point of view was its lack of explicitness in the stretches between nuclear tones though it was much less vague than a cursory examination might suggest. It also suffered

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from the lack of the support of an adequate theoretical analysis. The beginnings of this were to appear with the "great step forward" (K.L. Pike) taken at the publication of H.E. Palmer's English Intonation in 1922.

Daniel Jones's first original contribution to phonetics was a modest little volume of Phonetic Transcriptions of English Prose (88 pp., 1907). Its last two pages of transcription were of a gramophone record of a well-known actor of the day (Sir Herbert Tree) speaking Falstaff's famous "honour" speech (1 Henry IV Act 5 Scene 1). By the painstaking use of tuning-forks he indicated on a musical stave the precise pitches used by the speaker at and often within each syllable. He attempted this because, as he said in the Introduction to his whole book of such transcriptions (including English, French and German pieces) Intonation Curves (1909) two years later, previous intonation notations only gave "a rough idea of the kind of intonation" involved failing to "show with any sort of accuracy the precise points of the sentences at which the changes of pitch begin and end" and not indicating "the subtle variations of pitch which are perpetually occurring in speech". These very accurate pitch curves which he described optimistically as combining "scientific accuracy with practical utility" were a classic case of presenting the trees so well that the wood could not be perceived. They were vastly less effective than Sweet's notations. It is usually impossible from them to distinguish head from nucleus and nucleus from tail except by looking at the verbal text. In The Pronunciation of English (1909) the internal lines of the musical stave were abandoned but difficulty in relating pitch patterns to syllable sequences is as great as ever. When the Outline of English Phonetics appeared first in 1918 Jones still alleged that his continuous curved lines was "the most satisfactory way of representing intonation for practical purposes" but added alongside an "approximate musical notation" as being "also useful sometimes". In fact, with its information on rhythm and correspondence of musical note and syllable it was much more comprehensible.

Next a German, Herman Klinghardt, in Übungen im englischen Tonfall (1920) introduced a simplification of Jones's curves produced by breaking up the lines into successions of dots — one to each syllable — and giving useful indications of rhythm by contrasting bold and fine dots to represent stressed and weak syllables. Instead of Jones's blank musical stave he arranged his dots mainly above but also partly below a continuous straight line which apparently represented the sort of lower mid pitch of a speaker's

range, presumably roughly equivalent to what Kingdon (1958a) called the ordinary-prehead level and "a little below" what Crystal (1969 p.234) refers to as the "onset" level or hypothetical "pitch constant for any speaker" (p.143), at his "norm of prehead" pitch (p.234). Klinghardt gave appropriate tails to the dots of syllables on which pitch movement occurred.

Klinghardt's influence was acknowledged by Lilias Armstrong and Ida Ward when they published their Handbook of English Intonation (1926). They substituted straight and curved lines for his bold and tailed-bold dots and set them variously above a base-line or within a blank stave. When Daniel Jones came to re-write his Outline of English Phonetics for its third edition (1932) he adopted Klinghardt's type of intonation "graph" setting it within a blank stave whose outer lines represented "the upper and lower limits of the voice, and whose middle line represented an intermediate pitch". In the rewritten Pronunciation of English (1950) he discarded the middle line as have later users of such graphs. Kingdon has used wedges rather than dots, presumably to symbolise diminution of utterance force through the tone. Thus physical "etic" symbolisations of intonation have reached a very useful, perhaps an ultimate, degree of refinement. This cannot be said of systemic notations nor yet of theoretical analyses of English.

Other scholars whose work Jones helped to promote were H.O. Coleman and Walter Ripman who followed Coleman in using a system of numbers to indicate levels of voice pitch (Coleman used 9, Ripman only 3. Such systems have since been adopted by most American toneticians, most often with 4 levels). The Armstrong-Ward Handbook made little or no advance in analysing the structure of English intonation. Its notation contained so much superfluous detail that it failed to throw the most significant features into proper relief. It also dealt chiefly with the intonations employed "in the reading of descriptive and narrative prose". In the words of Professor David Abercrombie it is "a book that hardly deals with the intonation of conversation at all". Its theoretical approach, justly dismissed by Roger Kingdon as "a superficial description in terms of two contrasting tunes", is still curiously respected in some quarters. The Handbook survives in print still and even seems to receive some use as a teaching text in certain foreign universities etc. The two basic patterns it assumed were a low fall (in "Tune 1") and a low rise (in "Tune 2") each characteristically preceded by descending level stresses: all English intonation phenomena were treated as variations, reductions or elaborations of these two "tunes"

Four years before the appearance of this book H.E. Palmer had laid the foundations of a vastly more fruitful approach. He set out to isolate and indicate by a set of "tone-symbols" those syllables "at which the pitch changes its direction" because such a syllable is "the one that the speaker considers to mark the maximum of prominence in what he is saying". He called these key pitch-change locations which provided climaxes of prominence "nucleus tones". His symbols catered for the representation of complete falls from two ranges of height, and two low-starting rises, one to the middle and one to the top of the voice-range. He also had a falling-rising tone which he described as (not invariably but normally) beginning with an initial rise. This rise he referred to as "intensification". His total of special symbols came to seven for ordinary use (but included two further rare items). What followed any nucleus tone until the next nucleus tone was "heard or prepared for" he named the "tail" to the tone-pattern. Syllables that "come before the nucleus-tone" he referred to collectively as "heads". He divided these pre-nuclear patterns into three types, inferior, nowhere higher than their nuclei start, superior, descending and throughout above the start of the nucleus, and scandent, ascending to a point above the start of the nucleus. Inferior heads were unmarked or shown by a mid-horizontal long stroke, superior (although descending) were signalled by a high long horizontal stroke and scandent by an upward-sloping long stroke. Not only was the symbology rather confusing but there were awkward deficiencies in Palmer's account of the pre-nuclear element of the intonation unit. The pitch values of stressable syllables at the beginning of the head were unspecified. His impressions of the relative frequencies of occurrence of the rising-falling-rising nucleus and various "combinations of heads and nucleus-tones" contained obvious misjudgements: he placed scandent head plus low rise among the six most frequent such combinations. He appears for example to have considered ´Good ´bye to be the most usual form of this salutation. Apart from these pre-nuclear inadequacies Palmer's choice of symbols was somewhat uneconomically over-pictorial; they conveyed direction of pitch movement twice over: by their angles and by arrowheads. They were also unnecessarily bulky: when the tone passed through most of the voice range the symbols extended the full vertical depth of the line of print.

Roger Kingdon's first article on the subject, in 1939, showed that he fully recognised the superior economy of Sweet's symbols while at the same time placing a proper value on Palmer's theoretical advances. Refining

upon Sweet's symbology, by the end of the forties he introduced a variety of extra symbols and conventions and put into practical operation (unlike Sweet himself) Sweet's proposed convention of differential pitch height for (the beginning of) a tone according to whether its symbol was placed above or below the main (lower-case) line of print. A very important convention Kingdon introduced was that successive high level tones should be taken to form a descending scale. The stress value of each tone mark was defined and extra symbols introduced to distinguish between like pitches with different stress values. Sweet's level tone mark he used for unstressed syllables only (in high and low preheads and for low unstressed pitches after rise-fall nuclei) and the International Phonetic Association's authorised stress mark (a vertical stroke) was assigned to represent stressed level tones. Tone-mark doubling was introduced to indicate "emphatic" tones with wider etc. pitch values. E.g./"m/. This enabled amongst other things the "breaking upward" of a tune to be shown, that is the departure from the norm of steady descent in a downward stepping sequence. He introduced the term prehead for any initial syllables of intonation units which lacked "full" stress (what O'Connor and Arnold describe as "unaccented" syllables). Palmer's term "head" he reserved for the first fully stressed syllable of the intonation unit and the following pre-nuclear syllables he designated collectively its "body". In Kingdon's notation the "normal prehead", which is defined as "a trifle above the bottom of the normal voice range", (Groundwork, p.12) is unmarked (if containing no "partial stresses"). High and low, rising and falling preheads are represented by long strokes (approximately twice the length of the ordinary "kinetic" tonetic stress marks). A symbol · is used to represent "partial stresses" in rising tails etc. A vertical dividing line is used to resolve ambiguities of intonation unit delimitation.

This system makes available as "full stresses" twenty, and without full stresses a further six, or seven counting · , in all 27, "tonetic stress marks". Palmer's book English Intonation was 105 pages, Kingdon's writings on intonation include various articles, a practice book of over 200 pages, and The Groundwork of English Intonation, a volume of over 300 pages containing a great many valuable original observations. Most recently Kingdon has published another volume of over 300 pages copiously displaying his intonation notation (in a slightly simplified version), his complete re-working of H.E. Palmer's Grammar of Spoken English. Kingdon has come under heavy fire from those who would have had him place descriptive rigour

before pedagogical effectiveness. Nevertheless his work has clearly been profoundly influential. It has received the highest possible tribute, that of being adopted with little or no modification by such distinguished phoneticians as A.C. Gimson, P.A.D. MacCarthy, N.C. Scott and M. Schubiger, and also "in some large measure" by J.D. O'Connor and G.F. Arnold. The most advanced researches in this field by Crystal, Davy and others clearly reveal debts to him. The term prehead is now general in British use. Crystal, though keeping to Palmer's usage for the rest of the pre-nuclear pattern of the intonation unit, follows Kingdon (though using the term "onset" whereas Kingdon refers to it as "head") in attaching great analytical importance to its first major stress.

In 1944 K.L. Pike rounded off his earlier work on this subject with the publication of The Intonation of American English, an important volume of over 200 pages which thoroughly surveyed its antecedents and provided an extensive body of valuable observations described within an impressively rigorous framework. It dealt with various aspects of rhythm and pause as well as with pitch phenomena. Its rather clumsy notation occupies a separate line of numerical etc. symbols (figures 1 to 4, raised circles for the onsets of accents, hyphens and single and double oblique bars) beneath the line of text and has stress marks within the text. It is capable of showing pitch patterns of great variety with considerable precision: such a numerical system is nowadays used by the majority of American writers who deal with intonation, especially owing to the adoption in their influential Outline of Linguistic Structure (1951) of such a system by G. Trager and H. Smith (who reverse Pike's values of 1 as top pitch, 4 as bottom). Unfortunately the theoretical foundation on which these systems are based — an assumption that English has four significant ("phonemic" in the American usage) pitch levels — is seriously open to question.

It seems to be nearer the truth that the relationship between semantic contrast and pitch height varies in sensitivity according to the point at which a word comes in the intonation unit. Crystal and his colleagues take account of seven semantically distinct degrees of height at the transition from head to nucleus but only three degrees at the onset of the intonation unit. Zellig Harris has operated with six distinctive levels. And so on. Even Pike acknowledges that four levels are inadequate in reference to descending stress series.

In spite of Pike's great thoroughness and conscientious endeavour to account for all the available facts on American English intonation (he has for instance 27 nuclear tone varieties) there are some notable omissions in his inventory of "specific contours" i.e. types of intonation unit. In particular there is no reference to a rise-fall-rise tone at all and the only rise-fall tone type referred to, a low variety, is considered very rare. In the years during which Pike was writing his account one of the best known speakers in America, Franklin D. Roosevelt, could be heard to use frequent rise-falls of wide types. Some of these can be seen represented in the second edition of Ida Ward's Phonetics of English in a speech she transcribed tonetically from a gramophone record. They are frequent in the speech of very many other Americans — not only those from New England like Roosevelt. Nevertheless, Pike's is a great book: it stands even today as a truly realistic attempt at dealing with the semantics of English intonation, in spite of its many inadequacies. It fully deserves Crystal's description of it as "the first really thorough description of the intonation system of any dialect of English" (1969 p.47).

Another important independent attack on the problems of English Intonation appeared in 1952. It was the Intonation of Conversational English by the Polish scholar Wiktor Jassem. This had some very valuable features notably its being partly based on a small corpus of recorded materials and partly on the author's observations of the usages of actors in various BBC drama productions. Its analysis and symbology owed much to Palmer. Palmer had seven main nucleus tone symbols (plus two rare items): Jassem dropped one of these (↻) and adding four new ones (↱m, ↗m,→m, ↱m) arrived at a total of twelve. Instead of Palmer's three simple heads Jassem (who calls them Prenuclear Tones) had eight. These additional heads were all justifiable but still inadequate to cover the ranges of pitch possible and also to reflect stress distributions at the same time in the way the Kingdon notation does. Jassem's book contains many valuable insights and detailed descriptions of phenomena neglected by other writers on the subject.

Besides the books referred to above there have appeared various substantial articles of interest. One of these was a long study, published in Phonetica in 1958, by A.E. Sharp of Falling-Rising Intonation Patterns in English which demonstrated the different accentual values of the fall-rise and fall-plus-rise. Another, which appeared in the July-December issue of Le Maître Phonétique (1959), by J.L.M. Trim, entitled Major and Minor

Tone-Groups in English, rejected the Jonesian "sense-group", and called for recognition of level nuclear tones, subordinate types of pre-final tone-groups, rhythm groups not congruent with tone-groups, and also of the "very common" colloquial fusions of tail of one tone-group with prehead of another. This sort of fusion was fully recognised and exemplified in P.A.D. MacCarthy's path-blazing English Conversation Reader (1956) which "adopted Kingdon's complete set" of tonetic stress marks and gave the first demonstration of their use in extended texts. Another book, which deserves mention for its useful independent observations (again expressed with Kingdon terminology and notation), is Maria Schubiger's English Intonation (1958), which paid particular attention to the relations between intonation and grammar. W.R. Lee's English Intonation Reader (1960) also gave special attention to those features of English grammar which are expounded particularly by intonation. This "short practical handbook" consisted in large part of an extended dialogue (over 3000 words) written specifically to illustrate everyday conversational usages. The introductory theoretical exposition nevertheless contained original contributions to the description of English intonation usage (e.g. the patterns of radio announcement of football results p.68) and tone marks "reduced to a minimum ... of a simple kind" (p.7), showing "nature" but not "extent" for pitch movements, with a pictorial bias to facilitate their interpretation.

The following year appeared the Intonation of Colloquial English by J.D. O'Connor and G.F. Arnold, an "essentially practical text-book" for the "foreign learner", which offered an "indispensable minimum" of intonation theory and a very extensive selection of practice material. It constitutes one of the two largest bodies of English published with accompanying tonetic notation. The other is Kingdon's English Intonation Practice which is not exclusively colloquial but fairly evenly divided between colloquial and literary matter including verse.

The O'Connor and Arnold structural theory and notation in most essentials ("in some large measure" as the authors say) derive from Kingdon. But they include, as they rightly observe, "certain major differences" from Kingdon's system. The seven nuclear tones of which the book takes account are represented with the six Kingdon symbols /◟m, ◝m, ◜◝m, ◞m, ◜m, ◝◜m/ where /m/ stands for any syllable. Rise-fall-rise nuclear tones and low varieties of rise-fall and fall-rise are not included but their seventh nuclear tone, only "overtly recognised" in the extensively re-written second

edition of 1973, is the non-Kingdonian "mid-level". Though there is no reference to any narrow high-falling nuclear tone such a tone is recognised in pre-nuclear sequences. The arrow symbol /↗m/ introduced by Jassem in his extension of Palmer's notation to represent a narrow high fall is adopted not only in its original value but also to symbolise continuous descent through three or more syllables: an interesting innovation. This "falling head" symbol is paralleled by /↗m/ signalling their "rising head". Their "high head" uses Kingdon's high level tone mark, and their fourth and last "low head" uses his low level mark. The Kingdon high level prehead sign is used.

For the nuclear intonation unit the term tune is used. The term tone-group is used only of sets of similar units considered as conveying substantially the same attitude. The term prehead is taken over in Kingdon's original sense but for the rest of the pre-nuclear pattern the authors do not follow his subdivision into onset (as Crystal calls it) and body but refer to it as the head — an innovation followed by Crystal. (It will be remembered that Palmer's original use of head embraced the whole pre-nuclear pattern.) The term nucleus is defined as "the stressed syllable of the last accented word in a word group".

A fundamental item in their theory is the word group: this is defined as "a grammatically close-knit group of words co-terminous with and unified by an intonation tune" which term itself is defined somewhat circularly as "the complete pitch pattern of a word group".

Perhaps the most striking feature of their approach to intonation theory is the emphasis upon the classification of stresses not according to their formal realisations but to their semantically distinctive functions. To facilitate this purpose a special definition was given to the word accent as (p.286) "the means whereby a word is made to stand out in an utterance", that is singled out for attention as bearing "a major part of the information" (p.6). This division of stresses into two functional (as opposed to formal) types had already been extensively recognised in Kingdon's theory and notation where the terms "full stress" and "partial stress" correspond very closely to the ICE "accent" and stress without "accent". The value of this distinction in the semantic analysis of intonation is perhaps the book's most important contribution to intonation theory.

O'Connor and Arnold speak of the meanings which intonation patterns "convey" but would better have referred to the meanings as simply frequently correlating or co-occurring with the patterns. In accounting for effects said to be produced by patterns represented in a system of a mere thirteen symbols they employ well over one hundred and fifty descriptive expressions. Most of the terms seem too specific to particular situations to be related realistically to intonation values alone. As Pike said in Intonation of American English of his own attempts to label intonation effects: "In the future ... definitions of meaning will presumably have to be modified, especially by making them less specific". Like Kingdon's treatment of intonational semantics, this work suggests again and again that no further progress will be made in this area until a greater success has been met with attempts to disentangle from pitch features and their effects various other co-parameters such as voice quality.

The new edition of this book is likely to remain unsurpassed for a long time as a sourcebook for teachers of English intonation because it contains a very adequate range of patterns exemplified in a wide variety of genuinely colloquial materials.

M.A.K. Halliday's Intonation (1970) sets out his treatment of English intonation much more clearly than does any other of his writings. He approaches the subject as an essential element in an overall description of English grammar. In arriving at his conclusions he supplemented his general observations by "exhaustive textual analysis" of about an hour's conversation between himself and apparently two other speakers. The heaviest of his avowed leanings on previous studies seem to be tonetically on Palmer and rhythmically on Abercrombie. Among his conclusions the fundamental one is that English intonation is best analysed as involving "continuous selection from a set of five tones". He uses the word "tone" idiosyncratically not of single syllables but for whole patterns or tunes i.e. "fairly generalised pitch contours". Other usages coined by him are "tonality" for the establishment of the (boundaries of) the prosodic units ("tone groups") into which speech may be divided, and "tonicity" for the location of the tonic (nuclear) syllable (within the tone group) everything preceding which is the "pretonic".

An English intonation item ignored by previous analysts, a fall-rise with high termination, is accorded the important position of being one (along with simple high rise) of the two forms of number 2 of his five

primary tones (the only twins of the series). The arguments for not allotting it to the also falling-rising fourth primary tone are not offered. This tone 4 is described as having "a slight rise in the approach" to it which "may not be audible" but "can be felt": this mystifying assertion is not elucidated by the recordings which accompanied the publication of Intonation. As well as tone numbers the Halliday notation contains modifying signs in the form of pluses, minuses, hyphens and subscript dots and strokes, most of which accompany the number placed immediately after the double obliques (//) which signal the beginning of each tone group, within which single obliques separate feet (each of one stressed and possibly other unstressed following syllables). If the stressed syllable is absent from the first foot it is suggested by a caret ($_{\wedge}$). The total visual effect of the notation is very obtrusive compared with tonetic stress marks. The arbitrary nature of much of the symbology makes it difficult to memorise relative to explicitly directional iconic tone marks. Despite its complexity it leaves as many facts of English prosody unrecorded as do its rival systems.

The most exhaustive account of English prosody is to be found in the works of David Crystal Systems of Prosodic and Paralinguistic Features in English (1964), co-author Randolph Quirk, and Prosodic Systems and Intonation in English (1969). They arose out of the need in the Quirk Survey of English Usage of a notation which would "ensure that no potentially grammatically relevant prosodic phenomenon would be overlooked" (Crystal 1969 p.42). The tonetic analysis has three simple tones (one of which is the level), four complex and five compound tones. Seven degrees of height are distinguished at the most sensitive points of intonation units, giving 18 each of simple falls and rises alone. The notation, which one could hardly read aloud accurately on sight, hinges on an assumption that a speaker has a pitch norm for the first major stress ("onset") of his intonation units. From that point pitch modulations are indicated syllable by syllable by horizontal single arrows and vertical double and single arrows pointing either upwards or downwards until the nucleus (printed in capitals) is reached over which the appropriate item from the set of seven tone symbols is placed. There are four grades of prehead shown, except for the unmarked one, by horizontal lines at different heights etc.

Co-parameters of intonation are indicated by symbols and terms some of which are borrowed from musical notation. They include pitch range, with separate signs at nuclei (w and n) for wide and narrow; tempo, with signs

for "clipped, held" and "drawled"; loudness, with the usual IPA symbols for marked and strong stress; pause, with signs for "brief, single, double" and "treble" silent pauses and phonetic symbols for filled pauses. There are terms for kinds of rhythmicality and grades of tempo, and also to describe a dozen vocal colorations and eruptions (which he calls "voice qualifiers and qualifications"). This remarkably comprehensive analysis constitutes the most important contribution to the study of non-segmental phonetics since the work of Kenneth Pike.

The influence of Crystal's work on these co-parameters can be seen in the present writer's Guide to English Pronunciation (1969), intended for users of English as a foreign language, where in drills (chiefly at pp.117-120) instructions are given for use of breathy voice, whisper etc. This book's intonation notation is based on the essentially performance-orientated Kingdon system. While illustrating (though not necessarily offering for extensive practice) more different types of intonation unit than previous pedagogical works (well over thirty) it restricts its notation to only five basic tone marks /'m, `m, ˷m, ˻m, ´m/, with a few conventions for their interpretation. They are, however, combined without the change of their basic significations found in Kingdon. Thus, for example, three varieties of falling-rising tone can be represented /`˻m, ``m, ˷˻m/. A narrow descent on a single syllable is shown by generalising the convention of a drop in pitch occurring between two level tone marks, viz. /''m/. The usual close doubling of tone marks is used but only precisely for extra-ordinary pitch range or elevation. Stress is not shown as such. Among the intonation patterns included which have previously been neglected not only in pedagogical but even largely in descriptive work are some patterns mainly used in the manner of speaking adopted to someone a little distance away, as in many farewells. An account of such patterns by the writer appeared in Le Maître Phonétique for July-December 1970, pp.31-36 under the title The Tonal System of Remote Speech. The book suggests that all tones can be classified (and thus differentiated) in terms of three semantic features, (i) conclusive for falls, suspensive for levels and continuative or invitational for rises, (ii) animation and, separately from the last, (iii) emotiveness.

In spite of the volume of recent bibliographies of the subject, strikingly few individuals have contributed independent observations on the substance of English intonation. Those who have written on it have,

with the exceptions of Pike in the early forties and Crystal in the late sixties who both made thorough examinations of what had preceded their contributions, largely ignored the treatment of others. Items of substance in one treatment will not occur at all in another. The phenomenon mislabelled "homorganic prehead" by Kingdon is not even referred to by Crystal for example. Certain problems are obstructing progress in the development of a proper description of English intonation. One is the very natural pre-occupation of so many of us with pedagogical applications of our notations which are at variance with the wish to present the facts in all their true complexities. Another difficulty is that on the two sides of the Atlantic two varieties of notation are general which are difficult to equate. As an attack on this last problem the present writer has been experimenting in the last few years with an amplification of the Kingdon notation, so rightly preferred in Britain for its great iconic advantages, neatness and convenience, to match it with all the superior range of distinctions available in the most widely used American numerical notations, as below:-

A Set of Tonetic Symbols to Convey Four Pitch Ranges

(Extra-High, High, Mid and Low.)

Pike	Trager etc.	Symbol	Title	Description
1-1	4-4	"m	High Alt	At Extra High
1-2	4-3	↘"m	High Drop	From Extra High to High
1-3	4-2	ˋ·m	Short High Fall	From Extra High to Mid
1-4	4-1	ˋˋm	High Fall	From Extra High to Low
2-1	3-4	↗m	High Rise	From High to Extra High
2-2	3-3	'm	Alt	At High
2-3	3-2	↘m	Drop	From High to Mid
2-4	3-1	ˋm	Fall	From High to Low
3-1	2-4	ˊm	High Climb	From Mid to Extra High
3-2	2-3	´m	Climb	From Mid to High
3-3	2-2	·m	Mid	At Mid
3-4	2-1	ˎm	Slump	From Mid to Low
4-1	1-4	ˏˊm	High Jump	From Low to Extra High
4-2	1-3	ˏm	Jump	From Low to High
4-3	1-2	↗m	Rise	From Low to Mid
4-4	1-1	ˏm	Bass	At Low

Complex tones cannot be distinguished with any satisfactory degree of precision with the two (ICE) or four (Kingdon) now in use. They must be built up by the free combination of the simple elements of such an iconic system. In addition, although English has relatively uncomplicated tonetics as regards its rising tones (see my article 'The Tonetics of Rises') its falling tones, especially in some dialects such as Ulster varieties of English, may be not only direct but over polysyllabic stretches "distributed", even sometimes when nuclear. A distributed falling tone is very familiar before falling-rising and falling nuclei as in I ↘think it's about time you went to ˋbed with a smooth full descent after the first word to the penultimate from a high to a bottom-of-range tone. The various forms of rising-falling tones have yet to be sorted out at all adequately. The false tones often associated with the margin of the syllable rather than its centre have only received incomplete treatment so far (by Kingdon). Narrowed tones (of a semitone or less interval), phenomena of great semantic interest, have been neglected by almost all but Crystal. It will no doubt be desirable to expand even our 16-tone iconic notation to include several narrow varieties (e.g. Narrow Drop and Narrow Rise — respectively m̀, m̰).

With the ever-increasing interest in intonation being shown it may well be that significant further progress with the many problems that present themselves is not too far off.

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